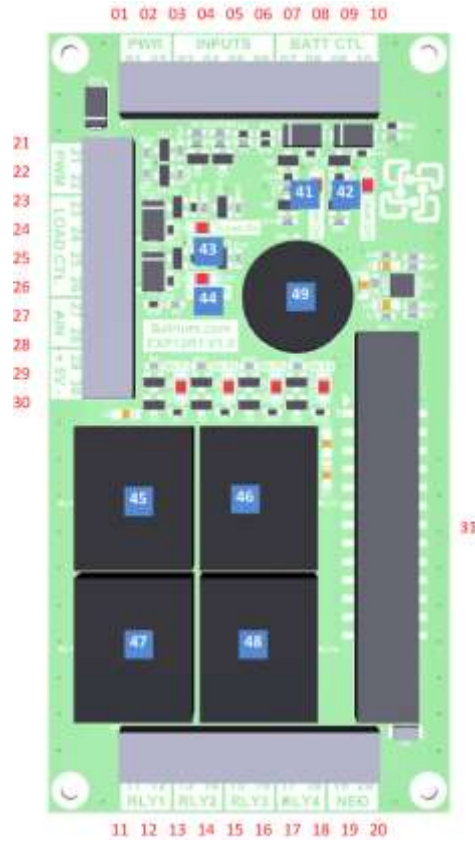


Expansion Board

Outline of Expansion Board



Overview

Provide inputs and outputs terminals to an extend range of features from either WatchMon or BridgeConnect. The initial solution is targeted for 12v control, maybe optimised for specific applications in the 24v and 48v markets.

Dimensions

107mm Length x 55mm width

Planned Models

- 48v
- EXP12R1 – 2 latched 12v contactor (switched positive),4 x Relay 10A 30vdc/240vac
- EXP12R1 – 2 latched 12v contactor (switched negative),4 x Relay 10A 30vdc/240vac
- 24v Solar MPPT/PWM + Load PWM

Documentation versions

Release 0.1 – 21-12-2015

Release 0.2 – 2-2-2016

Terminals and Dimensions

Pin outputs – Top terminals

Pin	Name	Details	Default
01	Supply Neg	Supply (8..65v)	
02	Supply Pos	Supply (8..65v)	
03	Input 1	Input Digital 1 (positive sense)	Run / Idle
04	Input 2	Input Digital 2 (positive sense)	Charge Normal / Recovery
05	Input 3	Input Digital 3 (ground sense)	System mode button
06	Input 4	Input Digital 4 (pulse counter)	SiCan/SiMon – Signal-In
07	Output 7	Output mosfet 4A (switched +ve 12v)	Batt – ON latched relay
08	Output GND	Ground for Pin 7..9	Batt - common latched relay
09	Output 8	Output mosfet 4A (switched +ve 12v)	Batt – OFF latched relay
10	Input 7	Input Digital 7 (ground sense) relay state	Batt - Latched relay sensor

Pin outputs – Bottom terminals

Pin	Name	Details	Default
11	Output 1 – NO	Relay 1 control 30Vdc 5A cont (10A peak)	OkNotCritical
12	Output 1 – C		
13	Output 2 – NO	Relay 2 control 30Vdc 5A cont (10A peak)	Warning InBypass
14	Output 2 – C		
15	Output 3 – NO	Relay 3 control 30Vdc 5A cont (10A peak)	Cooling Enabled
16	Output 3 – C		
17	Output 4 – NO	Relay 4 control 30Vdc 5A cont (10A peak)	Heating Enabled
18	Output 4 – C		
19	Output 11	NeoPixels / DotStar – Data	
20	Output GND	NeoPixel GND	

Pin outputs – Side left terminals

Pin	Name	Details	Default
21	Output 5	Output PWM 4A (switched GND mosfet)	Solar PV pwm%
22	Output 6	Output PWM 4A (switched GND mosfet)	Load pwm%
23	Output 9	Output mosfet 4A (switched +ve 12v)	Load – ON latched relay
24	Output GND	Ground for Pin 9..10	Load - common latched relay
25	Output 10	Output mosfet 4A (switched +ve 12v)	Load – OFF latched relay
26	Input 8	Input Digital 8 (ground sense) relay state	Load - Latched relay sensor
27	Input 5	Input analogue 5 (0..5v)	Charging Rate % threshold
28	Input 6	Input analogue 6 (0..5v)	Reserved
29	Reg 5v Pos	Regulated 5v Pos	DC-DC non-isolated 1W supply
30	Reg 5v Neg	Regulated 5v	DC-DC non-isolated 1W supply

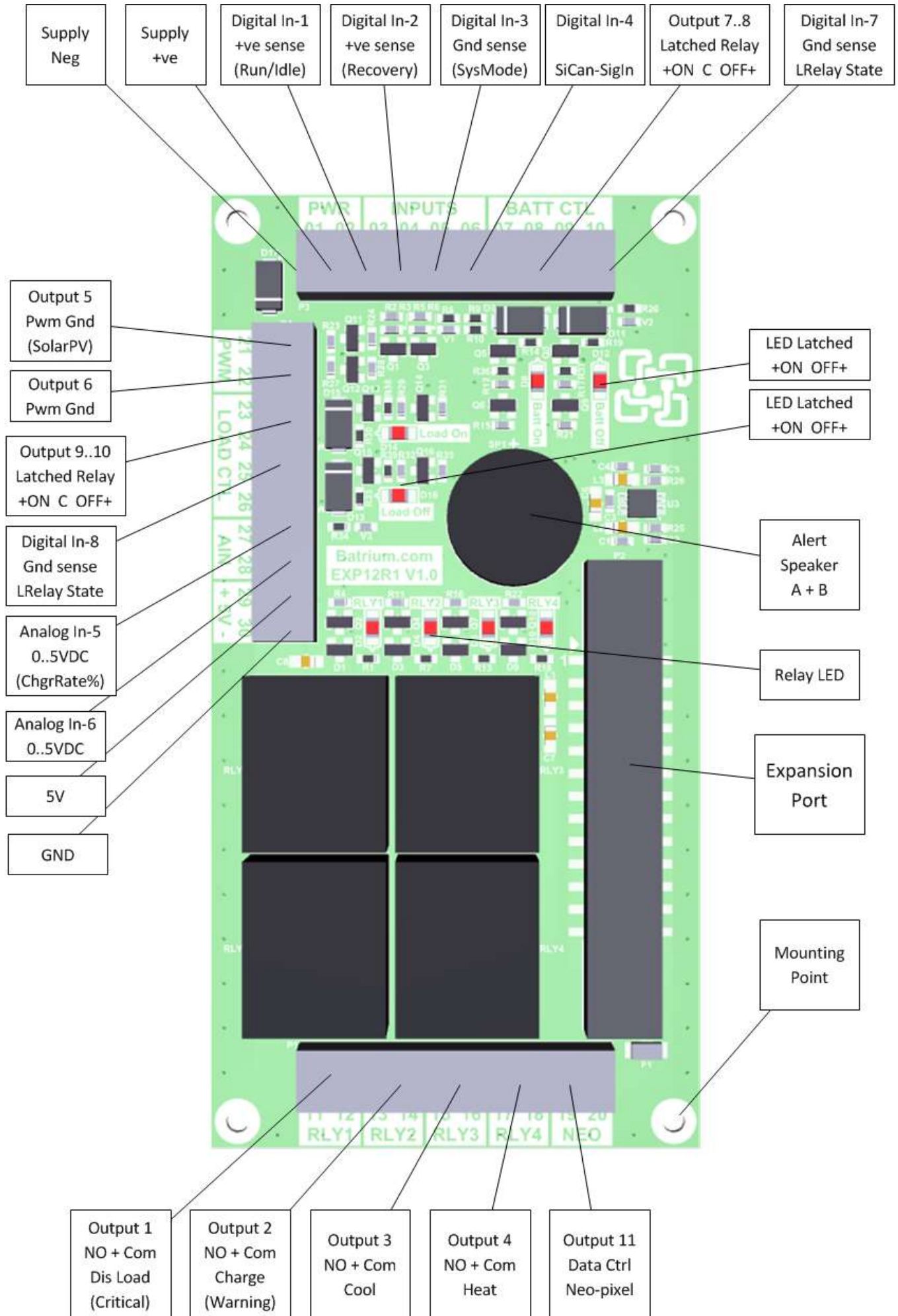
Pin outputs – Side right terminals

Pin	Name	Details	Default
31	Expansion Port	26pin Expansion Port	

Callout references

ref	Name	Details	Default
41	Indicator Out-7	Output active (Red led)	Batt – ON latched relay
42	Indicator Out-8	Output active (Red led)	Batt – OFF latched relay
43	Indicator Out-9	Output active (Red led)	Load – ON latched relay
44	Indicator Out-10	Output active (Red led)	Load – OFF latched relay
45	Indicator Out-1	Relay Output 1	OkNotCritical
46	Indicator Out-2	Relay Output 2	Warning InBypass
47	Indicator Out-3	Relay Output 3	Cooling Enabled
48	Indicator Out-4	Relay Output 4	Heating Enabled
49	Alert Speaker		Huston we have a problem

Component locations



Wiring outline

